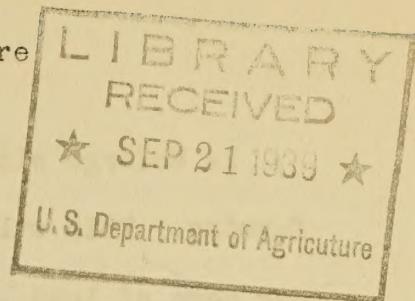


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ANALYSIS OF SELECTED FARM PROBLEMS,

ILLUSTRATED WITH SITUATION IN SUBAREA A OF COUNTY X

I. Determine acreage of adequate-size family farm.

A. The farm acreage that can be handled effectively by the representative family in Subarea A of County X may be determined by calculations.

1. Estimate the family labor available during the periods of heavy labor demands on the farm.

2. Estimate the acres of crops and numbers of livestock which can be handled during these periods by applying normal labor needs per unit by months to the several enterprises produced.

3. Estimate the number of acres of farm land commonly required to provide the acres of cropland arrived at in "2" above.

B. The size of the family farm may be estimated by the general knowledge of family farms in the area, checked with the judgment of leading farmers in the community. This is possibly not as accurate as the above method, but it is more direct and is quite adequate for our needs.

C. It is apparent that the acreage determined as necessary for the family-size farm will be influenced by the kind of crops grown and the amount and kind of livestock kept on the farm.

D. At this point it is worth while to compare the size of our family farm with the size of farms in the area at present with similar type of farming.

Are most farms larger or smaller? Can the difference be explained by differences in the type of farming?

E. What can be done about the problem of farm size?

1. Enlarge size of business by shifting to a more intensive system of farming. This will involve the use of more labor, equipment, and supplies per acre of land.

2. Enlarge the farm business by acquiring more land, either by rental or purchase.

a. Short-time possibilities.

b. Long-time possibilities.

II. Organization of typical family-size farm in Subarea A of County X. (See page 3.)

A. Size of farm and use made of land.

B. Crops grown and livestock produced on the farm.

C. Receipts using usual expected yields and assumed prices.

D. Expenses with usual crop and livestock practices, such as seeding, use of fertilizer, and feeding practices.

E. Farm-family income or the income that usually could be expected with present price relationships, after operating expenses are paid and allowance made for normal depreciation and upkeep.

III. Distribution of labor through the year on the family-size farm as it is now organized and operated, as compared with that for a cotton-dairy system in operation on the same farm.

A. Peak loads of labor are lower on the conservational system.

B. More labor to be done in the slack seasons of the year when cotton and corn do not require attention.

IV. Planning an improved system of farming for the farm and farm family.

Step 1. Inventory or appraisal of farm to be planned. (See page 4.)

a. Physical layout of the farm. - This should include a map of the farm made to scale showing the field arrangement, buildings, drains, woods, and other physical features. In some cases this map shows soil types, slope,

REPRESENTATIVE FAMILY-SIZE FARM IN SUBAREA A

Present System of Farming

<u>Acres</u>	<u>No.</u>	<u>Livestock program</u>	<u>No.</u>
Owned	70	Dairy cows	2
Garden	1	Veals	2
Woodland pasture	22	Sow	1
Farmstead, etc.	3	Pigs	10
Permanent meadow	3	Poultry	50
Cultivated	41	Workstock	2

<u>Crops harvested</u>	<u>Acres</u>
Cotton	26
Corn	12
Pea hay	2
Sorghum	1
Bermuda hay	3

Financial Results

<u>Sales</u>		<u>Expenses</u>		
<u>Item</u>	<u>Pounds</u>	<u>Dollars</u>	<u>Item</u>	<u>Dollars</u>
Cotton lint	3,610	361.00	Fertilizer	104.25
Cotton seed	3,216	32.16	Ginning, bagging, and ties	34.00
Butterfat	80	24.00	Seed purchased	12.00
Veals (2)	280	16.80	Feed purchased	71.00
Pork	750	52.50	Miscellaneous livestock	39.50
Hens	50	7.00	Hired labor	53.00
Fryers	100	20.00	Buildings	22.50
Eggs	200	40.00	Machinery	38.00
Total		553.46	Fences	17.50
Operating expense		436.75	Farm insurance	15.00
Farm family income		116.71	Farm taxes	30.00
			Total	436.75

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PHYSICAL INVENTORY OR APPRAISAL OF FARM

(1) Total acres in farm, 70. Owned, 70.

(2) Acres in orchard and garden, 1.

(3) Acres in woodland, 22.
Pastured, 22. Not pastured, _____.

(4) Acres in permanent open pasture, 0.

(5) Acres in farmstead, lots, etc., 2.

(6) Acres in roads, ditches, and waste, 1.

(7) Acres in cropland, 44.

(8) Soil needs: Limestone, questionable; phosphate, all cropland; drainage, none needed; terracing, all rolling land; contour furrows, steep pasture land; other, clearing for pasture - 10 acres.

(9) Condition of permanent pasture, none.

(10) Weed situation, serious.

(11) Erosion situation, severe sheet erosion and occasional gullies, some gullyling in woodland.

(12) Buildings and fences: Barn, 40 x 50; crib room, 300 bushels; hay space, 5 tons; fences, inadequate.

(13) Kind of lease, _____.

(14) Age of operator, 47. No. boys of work age, 2, Ages, 12, 14. Total months of family labor available, 11. Man equivalent, 6 mo.

(15) Amount of present debt, \$ 700. Annual service payment, \$ 45.

(16) Machinery and equipment: Tractor, no; truck, no; grain drill, no; binder, no; mower, yes; rake, no; manure spreader, no; small tools, adequate.

amount of erosion on each field, crop grown, and soil reaction in addition to fence lines, roads, drains, etc.

The topography, amount of erosion, drainage problems, and variations in fertility should be noted when making an appraisal of the farm.

b. Past cropping system. - If possible, obtain a record of acreage and production of the various crops for the preceding 5 years. Make note if there are areas where special treatment is necessary for the control of woods.

c. Amount of livestock produced. - List the kind and amount of livestock and livestock products produced on the farm, the amount of breeding stock on hand, and the preference of the operator and farm labor for various classes of livestock.

d. Equipment available. - Make a list and brief description of buildings, machinery, and fences, as this will be needed in determining the amount of crops and livestock that can be cared for and in calculating the value of new improvements that will be needed under the revised plan.

e. Markets available. - Make note of the markets available for the various farm enterprises, the distance to those markets, and the condition of roads or transportation facilities. Note should also be made of opportunities for part-time work either with neighbors or from nonfarm sources.

f. Tenure. - Note whether the farm is owned or rented, and if owned the opportunity for renting or buying additional land. If rented, note the kind of lease and the renting arrangement. Find out the extent to which the landlord will go in improving the farm with terraces, drains, buildings, livestock, and fertilizer.

g. Financial status and personal qualifications of the farm family. - Make a record of present debts and the annual payments for interest and

principal. What is the ability and willingness of the operator to borrow for further improvements? Estimate the amount of family labor available for operating the farm. Is the operator young enough to carry through an improved plan of organization? What are the special aptitudes of the farm operator and does he have a dislike for certain farm enterprises? Is the family interested in making sacrifices to get ahead?

Step 2. Planning land use, cropping system, and field layout.

a. Determine area that should be in woods. - Areas that should be devoted to timber production and areas of waste land, swamps, and stony places should be indicated on the farm map and the acreage determined.

(See section A.)*

b. Determine area that should be in permanent grass. - Indicate on the farm map areas that should be in permanent hay and pasture in order to control erosion and make the fullest possible use of the land.

c. Determine the amount of land that should be devoted to farmstead, gardening, lots, roads, and other noncrop purposes and thus arrive at the amount of land which remains for harvested crops. This will usually be the amount of land that can be handled in rotations.

d. Select the cropping system. - Decide upon a cropping system or rotation for each major class of soil in the area designated for crops.

(See section A.) In planning the cropping system the following things should be kept in mind:

(1) Build the rotation around the most profitable crops of the area, i.e., cotton, rice, strawberries.

(2) Include enough legumes, grasses, and cover crops to maintain or increase crop yields and provide organic matter to assist in the

* All section references refer to the attached Farm Plan.

control of erosion.

(3) Protect the land from the direct force of rain and rapid run-off for as large a part of the year as possible in order to decrease erosion. Growing crops on the land a large proportion of the year will help to decrease leaching of fertility elements.

(4) The land included in one rotation should be divided into as many fields of approximately the same size as there are years in the rotation. Two or more small fields which taken together form an area about equal to one of the larger fields may be considered as one field of the rotation.

(5) Fields should be located and shaped to aid in the control of erosion (strip and contour farming if needed).

(6) The cropping system should allow for economy in the use of labor, power, and machinery. Lay out fields for ease of cultivation if topography will permit.

(7) Pasture crops and cultivated crops should not be mixed in the same field unless the use of temporary fence can be justified.

(8) The rotation should give satisfactory control of weeds.

(9) The sequence of crops should be considered from the standpoint of the control of insects and plant diseases.

e. Plan the field layout. - Show on the farm map the proposed field layout keeping in mind the principles outlined above.

f. Provide for erosion control. - Indicate on the map the location of farm roads, terraces, diversion ditches, grass waterways, etc. that will contribute to the control of erosion.

The map and cropping system when finished should provide a picture of the long-time land use goal toward which to work. From this information

land-use changes may be made, fences may be moved, areas may be planted to forests or seeded to permanent pasture, and terraces, outlets, and dams may be constructed as opportunity is afforded with a minimum of cost.

Step 3. Fitting livestock to the cropping system.

a. Prepare a table showing the average acreage and production of crops under the revised cropping plan. - In preparing this table use average yields which may be expected after this system has had time to get under way, taking into consideration the effect of the crop rotation and the soil improvement program. (See section B.)

b. Decide on the kinds and numbers of livestock to be produced on the farm. - In deciding on the kinds of livestock to be kept on the farm, one should of course keep in mind the kind of feed available on the farm. If for example it is a rolling, hill farm, and hay and pasture grasses are the principal types of feed crops available, livestock which consumes relatively large amounts of hay and pasture would naturally be selected.

c. Prepare a table showing the kinds of livestock to be produced and the amount and various kinds of feeds that will be needed for a 1-year period. (See section C.) In selecting the livestock to be produced, one should also keep in mind the markets available, the amount of family labor available on the farm and the time of year when it is available, and the equipment that is on hand or may be obtained. The chief functions of livestock enterprises in the farm business are about as follows:

- (1) To utilize the legumes and grasses which are so necessary for the maintenance of fertility and the control of erosion.
- (2) To utilize rough feeds for which there is little or no sale value except through livestock and livestock products.
- (3) To increase the volume of business.

(4) To make a more efficient use of farm labor, power, and machinery than is possible where crops only are produced. It is usually wise to have more than one class of livestock and, if possible, to select those classes which are supplementary rather than competitive. Hogs and dairy cows supplement each other, whereas dairy cattle and sheep are competitive. On small farms it is often desirable to use dairy cows and poultry, since these enterprises are intensive in nature, use relatively large amounts of labor, and contribute more to an increase in the volume of business than other classes of livestock.

In estimating the amounts of feed needed for the livestock, tables may be prepared showing the approximate feed requirements for one year of different classes of livestock. These requirements may be based on records which represent better than average care and management.

If it is found upon completion of the table showing livestock feed requirements that the feeds required do not balance with those available from the cropping program previously developed, it will be necessary to make adjustments in the acres of crops grown or in the number of livestock kept, preferably in the latter. Thus it will be necessary to make a second estimate of the livestock feed requirements.

Step 4. Transition from the present organization to the final long time plan.

a. Separate and distinct plans are needed for each year in the transition period. - These plans may be rather elaborate including a map of the cropping system for each of the years and a detailed plan for crops and livestock each year, or it may be somewhat abbreviated and simply indicate the adjustments that are to be made from year to year in the farm layout,

the cropping program, and the livestock program. In any event, the major changes that are to be made each year, such as new buildings added, terraces to be constructed, areas to be planted to forest or seeded to permanent pasture, fences to be moved or constructed, and limestone to be applied should be definitely planned in advance. Then an operation plan can be prepared each year that will effect the changes and adjustments desired. The transition may be made in 1 year or in 5 years or more, depending on the amount and character of the changes required and the amount of capital and labor available for making the changes. It is usually desirable to proceed rather slowly so that the maximum amount of work may be done by regular farm labor when the press of work is not so heavy and thus cash expenditure can be held to the minimum.

Step 5. Check the financial possibilities of the proposed plan.

The final phase of farm planning is to ascertain the probable net income that will result from an adoption of the plan. The procedure involves the application of average prices to the volume of products that is to be sold and an estimate of expenses likely to be incurred under the assumed plan of operation.

a. Prepare tables showing the amount of each product for sale during the year, the estimated price, and the total value to be received. (See sections B and D.) - From these data calculate the probable total cash farm income. (See section E.)

b. Estimate the cash farm business expenditures for the year under the revised plan. - The expenditures for livestock can be calculated in section C, and the expenditures for seed, fertilizer, and supplies for crops can be estimated and recorded in section E. The expenditures for buildings, fence, farm insurance, and other general farm expense items should be

estimated and recorded in section E.

c. Calculate the probable net farm income. - This calculation can readily be made on section E of The Farm Plan.

d. Compare the estimates with actual farm records for farms of the same size located in the area. - The records used as a basis of comparison should represent a level of efficiency somewhat higher than the average of all farms in the area. Cooperating farmers should have a goal which is worthy of attainment.

V. Testing alternative opportunities in farm organization and management.

A. Sweetpotatoes substituted for a part of the cotton acreage on cotton-dairy family-size farm.

1. Calculate the additional expenses involved and the items of expense that would be reduced.
2. Calculate the added sales and the amount of previous sales displaced.
3. Compare the net financial results.
4. Consider long-time influence on soil productivity.
5. Consider influence on distribution of labor needs throughout the year.

B. Conservation program under A.A.A.

1. Comparison of income from A.A.A. and the costs involved in the practice.
 - a. Terracing program.
 - b. Diversion ditches.
 - c. Winter cover crops.
 - d. Improved practices.
2. Consider other possible returns, direct or indirect.

- a. Increased yields due to improved soil fertility and conservation of moisture.
- b. Absence of crop loss due to washing and silting-in of bottom land.
- c. Economies made possible by better balanced system of farming.

VI. Obtaining basic data needed for farm plans.

A. Crop yields.

In planning a farm business it will be advantageous for us to think of crop yields on three levels:

1. Average yields that are being received under present unimproved practices.
2. Average long-time yields that can be expected with improved practices after sufficient time has elapsed to get full advantage of these practices.
3. Intermediate yields that can be expected during the first 6 to 8 years with improved practices, before the full effects of these practices are reflected in higher yields.

It will therefore be well to keep these differences clearly in mind when we attempt to obtain information on yields. It is apparent that if we combine the three types of yields in our surveys we shall get an average figure which may be largely meaningless.

If a soil experiment field of the State experiment station is located nearby on the same general soil type this probably will represent the most valuable source of information, since it will give accurate comparative information on the three types of yields mentioned, provided the experiment has been running long enough to get full effects of the treatment. The weakness of this type of data, if any, is that the crops are not grown under actual farm conditions.

Another source of information which is readily available in each community is the experience of farmers in the community. This source of information can best be tapped by means of the enterprise survey or the farm business analysis survey. An enterprise survey will enable one to obtain information on the more important crops grown in the area without involving the whole farm business. With either type of survey the farm practices being used should be carefully noted and if a change in practices has been made recently this should be noted also.

B. Crop-requirement data.

This type of information is so closely connected with crop yields that it should be obtained in connection with yield data. As in connection with crop yields, three levels of production efficiency should be kept in mind in preparing tables of input items to be used in production.

The most important source of information of this type is observing farmers in the area. Those farmers who keep some form of farm records or who are keen, observant businessmen will be able to supply the most reliable information. This can be obtained very readily with the enterprise survey mentioned above. It can be obtained also with the farm business analysis survey, but these details are quite commonly not obtained in these surveys and a supplementary sheet must be provided to obtain the information.

C. Livestock requirement and production data.

It is apparent that the amount of feed, pasture, and equipment used, or which might be economically used, per animal varies widely due to the husbandry practices followed. It is, therefore, essential that we assume levels of production efficiency before we attempt to determine what the average requirements and production per animal per year will be. For our purposes two levels

of efficiency can be used, first, average practices followed by the rank and file of farmers and, second, improved practices demonstrated as economical by experiment-station results and by progressive farmers who have tried them out.

Information that will be helpful in setting up livestock requirement and production data can be obtained from experimental results and from farmers in the area through the use of livestock-enterprise surveys. In contrast with that for crops, livestock data can be adapted with a fair degree of confidence from similar data from adjoining areas. Results that can be expected with given practices usually will not vary widely from one part of the State to another.

D. Price data.

Normal expected prices are needed both for products produced on the farm and for items purchased in connection with the farm business. The Division of Crop and Livestock Estimates, Bureau of Agricultural Economics, prepares and makes available monthly and annually farm prices of the common farm products by States, but they are not available by parishes. It is therefore necessary to make desired adjustments in State figures to fit the particular local situation.

Prices of most farm-expense items are more difficult to obtain since the Division of Crop and Livestock Estimates does not make such data available. For the most part this information can be obtained best from local sources, such as newspaper files, records kept by retail establishments catering to farmers' needs, and from well informed, observant farmers.